REMARKS

Claims 1-15 are pending.

Claims 1 and 9 have been amended for clarity purposes only and no subject matter is being added. Claim 1 has been amended by incorporation of the features of Claim 2 therein and removal of "means for" language recited in Claims 1 and 2. Claim 2 has therefore been cancelled. The incorporated language of Claim 2 has also been amended by removal of the use of the conditional tense in the final line thereof.

Claim 9 has been amended by removal of "means for" language and use of the conditional tense in the final line thereof.

Claims 3, 5, 6, 10, 12 and 13 have been amended by removal of "means for" language. The dependence of Claim 3 has also been updated.

On page 2 of the Office Action, Claims 1, 7 and 8 are currently rejected under 35 USC § 102(b) as being anticipated by US 4,701,756 (hereinafter referred to as "Burr"). Applicants are traversing this rejection.

As mentioned above, the features of Claim 2 have been incorporated into Claim 1. Referring to numbered paragraph 4 on page 3 of the Office Action, it is admitted that Burr "does not specifically teach" the features of Claim 2. Applicants concur with this view.

Consequently, it is submitted that amended Claim 1 (containing the features of Claim 2) is not anticipated by Burr, because Burr does not teach that the frames of information each have a frame-start-sequence, and the star couplers each further include a frame-start-sequence changer to change the frame-start-sequence before outputting the frame such that an interconnection failure is diagnosable by analyzing the frame-start-sequence, as recited in Claim 1.

In view of the reasoning provided above, Applicants submit that Claim 1 is not anticipated by Burr.

Claims 7 and 8 depend from Claim 1. By virtue of this dependence, Claims 7 and 8 are also not anticipated by Burr.

On page 3 of the Office Action, Claims 2, 9, 14 and 15 are currently rejected under 35 USC § 103(a) as being unpatentable over Burr in view of US 6,292,464 (hereinafter referred to as "Elahmadi"). In view of the amendment made to Claim 1, Applicants expect that the rejection of Claim 2 is transferred to Claim 1. In any event, Applicants are traversing this rejection.

The application presently contains two independent claims, namely Claims 1 and 9. Below, Applicants explain that Burr in combination with Elahmadi do not teach all of the elements of Claims 1 and 9.

As suggested by its title, cited Burr relates to the field of fault-tolerant hierarchical networks. The objective of Burr, as suggested at col. 5, lines 46-48, is to introduce fault tolerance into hierarchical star networks. Burr describes a modification to a so-called prior art hierarchical network shown in FIG. 2 thereof. The network of FIG. 2 comprises a master hub 20 coupled to a plurality of slave hubs (2, 3, 4, 5), the slave hubs each being coupled to a number of stations, interpreted as nodes in the Office Action. According to FIG. 2, one of the slave hubs (5) is a slave to another slave hub (3). Col. 6, lines 19-23, describe the network of FIG. 2 being modified to supplement the master hub (referenced "31" in FIG. 5) with an alternative master hub 40 (col. 6, lines 19-23) and redundant links 33.

FIG. 9 of Burr describes a hub in greater detail. In particular, col. 8, lines 46-56 teaches that the hub comprises an array of receivers 42 that feed signals from a plurality of inputs to an arbiter 43. The arbiter selects one winner from among competing inputs from the receivers, a winning "packet signal" being passed to a re-synchronizer 44 in order to re-clock the signal and broadcast the signal, via an array of line drivers 45, to either parent or children (parents and children being explained at col. 5, lines 46-57 in relation to FIG. 4). According to col. 8, lines 63-65, the winner is the first packet or packets to begin on an input when the selection logic is idle. Burr does not describe the concept of a frame-start-sequence. Burr also does not therefore teach a mechanism for changing the frame-start-sequence or that analysis of the frame-start-sequence can be used to diagnose an interconnection fault.

Turning to Elahmadi, Elahmadi relates to the field of fiber optic communication systems (col. 4, lines 44-47), in particular a system and method for connecting traffic along a communications network (Abstract). Referring to FIG. 2 of Elahmadi, a communications

system 200 comprises a first node 210 and a second node 212 connected via a communications link 244 (col. 2, line 66 – col. 3, line1). According to col. 3, lines 3-5, transmissions operate over fiber cable between first and second optical switches 238, 240, in one direction at a first wavelength λ_1 and in a reverse direction at a second wavelength λ_2. Redundant communications links 235, 236 also connect the first and second optical switches 238, 240 (col. 3, lines 7-8).

A laser transmitter associated with a communication from the first node 210 to the second node 212 transmits an N byte long identifier, which includes an M bit long source ID of the transmitting laser (col. 4, lines 1-4). According to col. 3, lines 46-51, a fault along the main communications path 244 (FIG. 2) is detected by an external device (not shown), which may be in the optical switches 238, 240 for detecting an absence of the ID of the transmitting laser due to a failure of the communication path 244. While col. 3, lines 35-39 states that the "unique bit pattern" associated with the laser transmitter is identified by the switch at its input port and then re-routed and connected to an alternate or redundant fiber path to its destination. Elahmadi does not teach that the "unique bit pattern" is changed. Furthermore, Elahmadi simply teaches (at col. 3, lines 46-51) an unspecified technique for detection of a fault.

Referring to Claim 1, Claim 1 recites a self-routing communication network, comprising:

- a plurality of nodes;
- a plurality of star couplers each having a plurality of inputs and a plurality of outputs; and
- communication paths coupled between the plurality of star couplers and the plurality of nodes for communication therebetween of frames of information, wherein
- the communication paths include at least one alternative communication path;
- the star couplers each include an input detector to sense which input of inputs of the star coupler first receives a frame of information and for passing only the frame of information first received; and
- the frames of information each have a frame-start-sequence, and the star couplers each further include a frame-start-sequence changer to change the frame-start-sequence before outputting the frame such that an interconnection failure is diagnosable by analyzing the frame-start-sequence.

However, and with particular reference to the underlined features of Claim 1 above, the teachings of cited Burr in combination with Elahmadi fail to teach a frame-start-sequence changer to change the frame-start-sequence before outputting the frame such that an interconnection failure is diagnosable by analyzing the frame-start-sequence, as recited in Claim 1.

In this respect, the Office Action admits that Burr does not teach this feature and, furthermore, does not offer a reference in Elahmadi where this feature is disclosed; in particular, page 4, lines 1-2 of the Office Action simply states that a data header to communicate "pertaining" information is taught by Elahmadi in the Abstract and at col. 3, lines 35-39. However, these specific citations clearly do not disclose the feature of a frame-start-sequence changer to change the frame-start-sequence before outputting the frame **such that** an interconnection failure is diagnosable by analyzing the frame-start-sequence.

As stated above, while col. 3, lines 35-39 of Elahmadi states that the "unique bit pattern" associated with the laser transmitter is identified by the switch at its input port and then re-routed and connected to an alternate or redundant fiber path to its destination. Elahmadi does not teach that the "unique bit pattern" is changed. Accordingly, Elahmadi does not teach or suggest "a frame-start-sequence changer to change the frame-start-sequence."

In any event, it is submitted that the reason for combination advanced in the Office Action is improper. The Office Action states:

> "*At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Burr with the teachings of Elahmadi et al. The motivation would be the need for a new method and apparatus for inexpensively and easily determining fault condition and rerouting traffic between nodes in a communication network (Column 1 Lines 50-55).*" [Emphasis added]

However, this argument is circular and employs hindsight. In this respect, the only reason given in the Office Action to combine the references to make the combined network is to make the claimed combined network. There is no teaching in the cited prior art suggesting the combination and the present application only teaches the combination. See MPEP Section

2141: "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure[,] citing In re Vaeck."". Also, MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." applies.

In addition, the reason provided "*the need for a new method and apparatus for inexpensively and easily determining fault condition and rerouting traffic between nodes in a communication network*" is conclusionary. It does not set forth how the combination of the two references would obtain the stated benefit. "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" KSR, 550 U.S. at ___, 82 USPQ2d at 1396. In this respect, the statement provided ("*need for a new method and apparatus for inexpensively and easily determining fault condition and rerouting traffic between nodes in a communication network*") is a conclusionary statement and not articulated reasoning and so a sufficient reason has not been provided. See also Ex parte Penhasi, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter."). It is therefore submitted that the Office Action has not satisfied the necessary criteria of providing a reasoning to combine Burr with Elahmadi and so the rejection raised is improperly formulated.

In view of the reasoning provided above, Applicant submits that Burr in view of Elahmadi does not render Claim 1 obvious.

Claims 7 and 8 depend from Claim 1. By virtue of this dependence, Claims 7 and 8 are also not obvious.

Claim 9 is a claim directed to a star coupler for use in a self-routing communication network corresponding to the self-routing communication network of Claim 1. Consequently, the arguments set forth above in support of Claim 1 apply equally to Claim 9. As such, it is therefore respectfully submitted that the teachings of Burr in combination with the teachings of Elahmadi fail to teach a frame-start-sequence changer to change the frame-start-sequence in a predetermined manner before outputting the frame of information, whereby

interconnection failure in the network is diagnosable by analyzing the frame-start-sequence, as recited in Claim 9.

In view of the reasoning provided above, Applicant therefore submits that Burr in view of Elahmadi does not render Claim 9 obvious.

Claims 14 and 15 depend from Claim 1. By virtue of this dependence, Claims 14 and 15 are also not obvious.

The case is believed to be in condition for allowance and notice to such effect is respectfully requested. If there is any issue that may be resolved, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,

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